

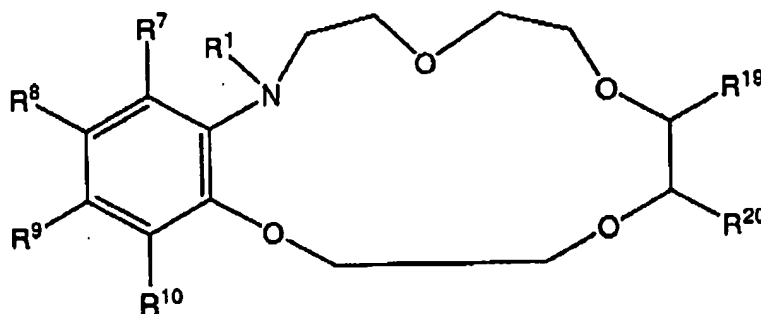
Gee *et al.*
Serial No. 10/634,336

Docket No. MP.0070.1CIP

REMARKS

The Claimed Invention

The present invention is directed to derivatives of crown ether compounds that optionally comprise a dye, a reactive group or a conjugated substance. These crown ether compounds have the following general structure:



wherein the substituents are as defined in the claims. The present crown ether compounds bind sodium, calcium, potassium ions and other ions under physiological conditions and when attached to a fluorophore demonstrate a changed fluorescent signal when bound to the ions. Thus, these crown ether compounds find particular use as indicators of the metal ions.

The Pending Claims

Prior to entry of the attached amendments, Claims 1-38 are pending. Claims 1-27 are directed to the present crown ether compounds. Claims 28-29 are directed to a composition comprising a present crown ether compound and a metal ion. Claims 30-37 are directed to a method for detecting target metal ions in a sample using the present crown ether compounds. Claim 38 is directed to a kit for binding a metal ion in a sample.

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The Office Action

Claims 1-27 are rejected.

Claims 28-38 are withdrawn from consideration.

Claims 1-27 stand rejected under a judicially created doctrine as being drawn to an improper Markush group.

Amendments

Claims 1, 4, 5, 7, 9, 10, 13, 23, 28, 30, 35, 37, and 38 have been amended.

Claims 2, 3, 6, and 8 have been canceled.

Claims 1, 13, 28, 30, 35 and 38 have been amended to embrace only the elected core structure.

Claims 4, 5, 7, 9 and 10 have been amended to depend from Claim 1.

Claim 23 has been amended to include the same scope for Rx and Sc found in Claim 1.

Claim 37 has been amended to correct a typographical error.

Applicants believe that no new matter has been added by any of these amendments and the Examiner is respectfully requested to enter them.

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RESPONSE TO THE RESTRICTION REQUIREMENT

In the response that follows, the Examiner's Election/Restriction of the Applicant's claimed invention is provided in full text, as identified by indented small bold print, followed by the Applicants response.

Compounds, corresponding compositions, a method of use and a process of making that are of the same scope are considered to form a single inventive concept. The compounds instantly claimed are not so linked as to form a single inventive concept. The compounds are so diverse in scope that a prior art anticipating one compound under 35 USC 102 would not render obvious another compound of the same claim under 35 USC 103. This is evidentiary of patentably distinct and independent inventions.

The requirement is still deemed proper and is therefore made FINAL.

As suggested by the Examiner the Applicants have amended the claims (compounds, compositions, methods and a process of making) to embrace only the elected core.

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RESPONSE TO THE REJECTIONS

In the response that follows, the Examiner's individual rejections are provided in full text, as identified by indented small bold print, followed by the Applicant's response.

Improper Markush Rejection

Claims 1-27 are rejected under a judicially created doctrine as being drawn to an improper Markush group, that is, the claims lack unity of invention. The variables E1, E2, E3, P, and Q are defined in such a way that they keep changing the core of the compound that determines the classification and search. By changing these values, several patentably distinct and independent compounds are claimed. In order to have unity of invention the compounds must have "a community of chemical or physical characteristics" which justify their inclusion in a common group, and that such inclusion is not repugnant to principles of scientific classification" In re JONES (CCPA) 74 USPQ 149 (see footnote 2). The structural formula in claim 1 does not have a significant structural feature that is shared by all of its alternatives which is inventive. The structure has only a benzo fragment as common. This feature is not inventive. Compounds embraced by claim 1 are so diverse in nature that a prior art anticipating a claim with respect to one member under 35 USC 102 would not render obvious the same claim under 35 USC 103. This is evidentiary of patentably distinct and independent inventions.

Limiting the claims to the elected group would overcome this rejection.

Applicants are advised to amend the claims to reflect the elected core and to also parallel the allowed claims in US 6,962,992

As requested by the Examiner, the Applicants have amended the claims to embrace only the elected core. These claims parallel the claims that were amended and allowed in the parent patent, US 6, 962,992.

The Examiner is respectfully requested to withdrawn the rejection of claims 1-27, based on a judicially created doctrine as being drawn to an improper Markush group.